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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/282,425	03/31/1999	KENJI NAGASE	122.1366	8587

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EXAMINER

MAKHDOOM, SAMARINA

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 03/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/282,425

Applicant(s)

NAGASE ET AL.

Examiner

Samarina Makhdoom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 11-15, 28-31, 33-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 5, 14, 15, 31, 35, 38 and 61-71 is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-13, 28-30, 33-34, and 36-37 is/are rejected.
- 7) ☒ Claim(s) 39-60, 64 and 70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

***Response to Amendment***

1. Claims 6-10, 16-27, and 32 are cancelled. Claims 33-71 are newly added. Claims 1-5 and 28-31 are amended. Claims 1-5, 11-15, 28-31, and 33-71 are pending.

***Specification***

2. Objection to the specification is now withdrawn.

***Claim Objections***

3. Claims 64 and 70 are objected to because of the following informalities: Claim 64 is dependent on Claim 72. There is no Claim 72 in this application. Claim 70 is dependent on Claim 64. For examination purposes, the examiner is interpreting the reference to Claim 72 in Claim 64 as a reference to Claim 62.

Appropriate correction is required.

***Drawings***

4. The corrected or substitute drawings were received on 12/27/2002. These drawings are approved.

***Response to Arguments***

5. Applicant's arguments filed 12/27/02 have been fully considered and they are persuasive with respect to 35 USC 112 rejections and to 35 USC 102 rejection with respect to claims 30-31;

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however, the applicant's arguments are not persuasive with respect to 35 USC 102 and 35 USC 103 rejections for Claims 1-5, 11-15, and 28-29.

In the remarks, applicant argues in substance that (1) Otsu uses harmonic current processing, and the claimed invention calls for current calculation with the moment method and the mutual impedance, (2) The third calculating unit of Claim 3 calculates the electric current using two wave sources and Otsu uses three wave sources for this calculation, (3) The fourth calculating unit is not taught by Otsu.

In response to applicant's arguments (1) Otsu discloses using method of moments to calculate current (See Abstract for a simulating unit finds current spectrum in each element according to the moment method and the mutual impedance calculated by the calculating unit) thus the limitation in met. (2) The third calculating unit of Otsu may use up to three wave sources if desired (see Col. 28-lines 1-30 for the third process of finding the current spectrum) so Otsu could use two or three wave sources for calculating the electric current. (3) Examiner agrees with applicant's argument and related claims with this feature are indicated as being allowable.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**7. Claims 1, 3-4, 11, 13-14, 28-30, 33-34, and 36-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Otsu et al, U.S. Patent No. 5,903,477.**

As per Claim 1 and 29, Otsu et al disclose an apparatus for calculating a radiated electromagnetic field including segmenting the electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method, comprising: a first calculating means (see col. 16, lines 20-37) where sampling frequencies are selected for calculating the mutual impedance; and a second calculating means (see col. 17, lines 55-64) for solving simultaneous equations using the moment method.

As per Claim 3, See discussion re Claim 1 above for first and second calculating means; and Otsu et al discloses a calculating means for calculating the mutual impedance of respective frequencies using the mutual impedance calculated at a sampling frequency by approximate expression. (See Col. 9, lines 48-53 and Col 23, lines 45-52) In calculating the mutual impedance by approximation or proportion, the electric current will also be calculated by approximation or proportion.

As per Claims 11, and 13-14 Otsu et al disclose that when considering a dielectric, a mutual admittance and mutual reactance among elements at the representative frequency are

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calculated in accordance with simultaneous equations under the moment method (See Col. 6, lines 19-47). This further limitation of the above claims is disclosed in the Otsu reference.

As per Claim 28 and 30, this is the method claim outlining the same steps as in Claim 3. The Otsu et al reference not only outlines the calculating means for Claim 3 but also discloses and claims the method of calculation for Claim 28.

As per Claims 33, 36, Otsu teaches a managing means (See Col. 9, lines 36-47 for the managing means 20 for managing the configuration of information);

An acquiring means (See Figure 1, for arrow indicating data going from managing means 10 to the Calculation unit 12. The calculation unit acquires information from the managing means);

a first calculating means (see col. 16, lines 20-37) where sampling frequencies are selected for calculating the mutual impedance;

and a second calculating means (see col. 17, lines 55-64) for solving simultaneous equations using the moment method.

As per Claims 34, 37, Otsu teaches a managing means (See Col. 9, lines 36-47 for the managing means 20 for managing the configuration of information);

An acquiring means (See Figure 1, for arrow indicating data going from managing means 10 to the Calculation unit 12. The calculation unit acquires information from the managing means);

a first calculating means (see col. 16, lines 20-37) where sampling frequencies are selected for calculating the mutual impedance;

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and a second calculating means (see col. 17, lines 55-64) for solving simultaneous equations using the moment method;

And a third calculation means for calculation electric currents other than the current in the second calculating means (See Col. 28, lines 40-60 for a third calculation process).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 2, 5, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsu et al in view of Nakanishi, U.S. Patent 5,887,186.**

As per claims 2 and 5 Otsu et al disclose an apparatus for calculating a radiated electromagnetic field including segmenting an electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method, comprising: a first calculating means (see col. 16, lines 20-37) where sampling frequencies are selected for calculating the mutual impedance; and a second calculating means (see col. 17, lines 65-65) for solving simultaneous equations using the moment method. Otsu et al mention using LU decomposition for achieving higher processing speed. Otsu et al, however does not disclose many details pertaining to the LU decomposition for achieving higher processing speed. Nakanishi teaches LU decomposition to speed up processing time (See column 2, lines 5-8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Otsu et al. teaching with the Nakanishi LU decomposition method because 1) Otsu expressly discloses using the LU decomposition technique and 2) it would save computation time and allow for a higher processing speed. The benefit to computation time and processing speed are stated in the Otsu et al reference, "at the time of solution of the simultaneous equations under the moment method, if for example the LU breakdown method... is used, a further higher processing speed can be achieved. (See col. 18 lines 1-5).

As per Claims 12 and 15, these claims are dependent on Claims 2 and 5 respectively. Otsu et al disclose that when considering a dielectric, a mutual admittance and mutual reactance among elements at the representative frequency are calculated in accordance with simultaneous equations under the moment method (See Col. 6, lines 19-47).



*Allowable Subject Matter*

10. Claims 4-5, 14-15, 31, 35, 38, and 61-71 are allowed. Claims 39-60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samarina Makhdoom whose telephone number is 703-305-7209. The examiner can normally be reached on Part Time on Friday, and Sunday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska can be reached on 703-305-9704. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-0040 for regular communications and 703-305-0040 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

SM  
March 7, 2003



KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER